

The Bee's Home Magazine Page

Mighty Swing of Equinoxes

By GARRETT P. SERVISS.

"I have read that the sun passes into a new sign of the Zodiac once in 1,190 years. Please explain what this means; also the statement that at each of these periods some new phase of religion has appeared on earth. A. T. S. Marselles, Ill."

What you have encountered is the procession of the equinoxes, a majestic and unobscured phenomenon of the solar system, from the contemplation of which astronomers derive great intellectual pleasure, while it appears to fill astrologically minded persons with mysterious awe.

If you will imagine this earth to be a huge spherical top, spinning daily upon a peg which is tipped about 23 degrees from the vertical, and also, like any other top, turning slowly round upon the point of its peg, so that the upper end of the peg describes a circle in the air, you will have the first conception necessary for understanding the procession of the equinoxes.

Let the earth's axis be the peg; let the north pole be the upper end of the peg, let the circle of the ecliptic, which the sun appears to describe once a year around the earth, be parallel to the invisible floor on which the top is supposed to be spinning, and just so high above that floor that its plane cuts through the center of the earth-top.

Then, back of all, among the stars, which surround the earth like the spangled walls of a circular room, let there be a band sixteen degrees in width, extending completely around, with the plane of the ecliptic marking its central line. This starry band will be the zodiac. Divide it into twelve equal parts, each thirty degrees long, and they will be the "signs" of zodiac.

Now, remember that the top is spinning from its peg, or axis, inclined from the perpendicular. If the peg stood upright, the central line of the zodiac, or ecliptic, would lie in the plane of the top's equator, and the sun, traveling around the circle of the ecliptic, would always be directly over the equator. As things really are, however, the tilting of the peg, or axis, causes the sun to appear above the equator during one-half of its revolution, or one-half of the year, and below it during the other half.

The minute inhabitants of the spinning top, being very intellectual creatures, understand that this apparent up and down swing of the sun, in the course of every year, is due to the inclination of the equator of their top to the circle of the ecliptic, and in order to make a graphical explanation of the phenomenon they project the plane of the equator in the form of an imaginary circle against the starry background of the heavens, and they find that this circle cuts the circle of the ecliptic at two opposite points on the band of the zodiac.

At one of these points the sun is seen rising above the equator at the beginning of its half-yearly course on the upper side of the equator (the summer half of the year for the northern hemisphere,) and at the opposite point the sun is seen descending below the equator for the winter half.

The first point is the most important, since it denotes the beginning of the year, or the opening of the spring season, for the inhabitants of the upper hemisphere, and it is called the spring, or vernal equinox. When the zodiac was invented, its first sign, Aries, was made to begin at this point, so that the sun "enters Aries" at the moment it rises to the level of the equator at the beginning of spring.

Then, travelling eastward, it passes in succession through the other signs—Taurus, Gemini, Cancer, Leo, Virgo, Libra, Scorpio, Sagittarius, Capricornus, Aquarius and Pisces—and, having thus completed the circle of the zodiac, comes back again to the spring equinox. At the beginning of Libra it passes below the equator.

Now, here is an important thing to remember: In the beginning the signs of the zodiac were visibly indicated in the sky by groups of stars called constellations, and these zodiacal constellations, not only bore the same names as the signs, but also occupied the same space in the ring of the zodiac.

This state of things would have continued forever but for that slow, swinging round of the peg of the earth-top to which reference has been made. The result of this motion, which gradually changes the direction of the peg, or axis, is to cause the points where the sun crosses the equator to move, or slide, round the zodiacal ring, in a western direction, so that the signs of the zodiac, which continue to be counted from the spring equinoctial point, are slowly bucking around the circle and fall out of accord with the corresponding constellations, which retain their places on the background of the sky.

At the present time this motion, which is the procession of the equinoxes, has brought the sign Aries back into the constellation Pisces, so that, at the beginning of the spring, the sun comes up above the equator among the stars of Pisces instead of among those of Aries, as it did about 2,100 years ago.

The entire time required for one complete swing of the axis of the earth is about 25,920 years. At the end of that period the signs and the constellations of the zodiac must come round again into coincidence, the signs having bucked through the entire circle.

This imposing phenomenon was discovered in the days of the Greek astronomer Hipparchus, but his cause was not found out until Newton had unravelled the law of gravitation. Then it was seen that the attraction of the sun and moon on the equatorial protuberance of the earth caused the latter to behave exactly like a spinning top whose peg is tipped out of the perpendicular, and which, instead of falling round and round, but with a motion much slower than that of the spin.

As to any relation between the procession of the equinoxes and the phases of religious belief, I must leave that to those who can show a reason for it.

"M-O-T-H-E-R---A Word That Means the World to Me"

By Nell Brinkley
Copyright, 1915, Intern'l News Service.



The best love song! About the tenderest sweetheart a man may have, "Mother." Where now is Sylvia—and all the dim, ghostly parade of maids, pale gold and nut-brown and night-dark, who lean from the realm of songs? A thousand songs a year lift choruses to the grace of a girl—a line to her penciled brows, a chant to the blue of her two eyes, a refrain to the fragrant flower of her mouth, a waltz wherein her twinkling satin feet skim like a wind on the water—always a man in rapturous praise of a maid and singing aloud for all the world to hear.

And now, at the end of a year—to crown it—soars above the

crowding music a new love song. To an old, old sweetheart, with the most musical name in the world—"M-o-t-h-e-r," the word that means the world to me.

Somebody has been clear-sighted enough, understanding enough of the world's good and still childish heart, and wise enough to put the feeling of struggling mankind for the idolized name of Mother into song.

And how understanding that somebody has been is attested by the fact that "M-o-t-h-e-r, A Word That Means the World to Me," is being sung from hundreds of stages by artists from coast to coast.

And when you hear it you will not wonder. Here is how the chorus goes:

M—Is for the million things she gave me.
O—Means only that she's growing old.
T—Is for the tears she shed to save me.
H—Is for her heart of purest gold.
E—Is for her eyes, with love-light shining.
R—Means right, and right she'll always be.
Put them all together, they spell M-O-T-H-E-R, a word that means the world to me.

—NELL BRINKLEY.

Judging Your Friends

Be Sure You Are Not Too Hasty, for Thus You Condemn Yourself.

By BEATRICE FAIRFAX.

"Judge not, that ye be not judged." How many of us are familiar with that quotation from the Book of Books? How many of us practice it? Heavy judgment reflects never so much on the person you condemn as on yourself. In every human relationship there come many instances when one friend has the choice between giving to another the benefit of the doubt or judging and condemning him on the evidence in hand. If the case were put to you and you were asked, "If everything looked black against a friend, what would you do—sit coldly aloof in majesty and form your judgment without offering a chance of defense? Rush to the friend under suspicion and revile and abuse without waiting to hear the defense? Or go quietly to the suspected individual and tell him that you had heard things which reflected very much on him, but that you wanted to hear his side of the story before you formed your judgment?" The first course is as self-sufficient as unfair; the second is as cruel as cowardly,

and the third represents the only fair, decent and honorable thing to do. But too small a proportion of human beings practice the third course. "Oh, yes," you will say, "but who wants to be the dupe of his own weak liking for an untrustworthy and unreliable individual? Who wants to be betrayed by a friend and then go to that Judas friend and say, 'Explain this as you can and as plausibly as you may—I'll listen and believe?' Who wants to accept dishonesty so meekly and humbly as to invite a repetition of it?" Have you never been guilty of an impulsive action that set free a chain of dangerous circumstances? Have you never said something in all good faith to a friend which by the time it had passed from mouth to mouth through an alphabet of individuals to F looked as if you hadn't been quite fair to that person? Perhaps B, C, D and E unconsciously exaggerated the story in telling; perhaps one of them had a grudge against you; perhaps one of them used you to gloss over some offense of his own. Would you not have thought it cruelly unfair of F to put you down as dishonest

and untrustworthy merely on the strength of this much-traveled and oft-repeated tale? Of course you would. But if the case were reversed are you sure that you would give F the benefit of the doubt? Every time you sit in judgment on a friend and condemn him unheard you are practically acknowledging that you are capable of dishonesty! None of us can conceive of anything that lies absolutely outside of his own nature. If you can suppose that any one has lied to you it is because the world comes as much from within our own nature as from the outside. Before you judge a friend, judge yourself. If you can think in terms of dishonesty, untruth and unfairness these qualities lie in you. As you give to another the benefit of the doubt and allow for the fact that though he acted unwisely, it may have been with decent motives, you mark yourself out as one whose own motives are decent and kind. Whenever you judge cruelly and unkindly you judge, first of all, yourself, and then the criminal you condemn unheard.

Rise of a Newsboy

By H. H. STANSBURY.

WASHINGTON, Nov. 24.—"Sammy" April is just a plain, noisy newsboy, but he enjoys the distinction of serving the president of the United States with copies of the daily papers each morning and afternoon. He also crosses the street from the White House to the State, War and Navy building and performs a similar purpose for the secretary of state and others. He is trusted to the extent that he goes unchallenged into the office of his distinguished patrons, no matter what important conference is going on. "Going to be a newsboy all your life?" I asked the other afternoon. "Thomas A. Edison started as a newsboy; didn't he?" Before I could add a word of encouragement to such an ambition, Sammy was half way up the steps of the somber gray building across the way, but he had recalled the story, I have heard the great inventor tell himself. Mr. Edison began to sell papers in 1859, when he was 12 years old. Later he became a train butcher on the Grand Trunk railroad, running out of Detroit. He usually sold 20 papers a day. When there was big war news he sold more, and he

made an arrangement with a printer in the office of the Detroit Free Press to see the proof of the most important piece of news before the paper came out, that he might have advance information. Edison regulated his orders for papers according to his opinion of public interest in the news. Sometimes he sold as high as 300 copies on the report of union victories. One night, in the first week of April, 1862, the printer showed him a proof of a big story for the next morning. It was the first news of the battle of Shiloh and contained the report of 60,000 casualties. He straightway telegraphed a brief bulletin of the news to the agent at every place where his train stopped, asking that it be posted in the station. Then he endeavored to get credit for 1,000 copies of the Free Press. The circulation manager refused the credit. Edison then went to the owner and asked that he be given credit for 1,500 copies, and obtained it. He found mob awaiting the train at the first stop. He usually sold two papers there, but his bulletin enabled him to sell 300 at 5 cents a copy. He sold 200 at the next station at 10 cents and at the other stations he had no difficulty in getting 25 cents a

copy, and disposed of his entire stock. Mr. Edison has said that he became so impressed with what a telegraph message could do, he decided to become a telegraph operator. Next he became interested in electricity. And the rest is history.

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